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(71) Applicant (for all designated States except US): **BOARD OF REGENTS OF UNIVERSITY OF TEXAS SYSTEM** [US/US]; 201 W. 7th Street, Austin, TX 78701 (US).

(74) Agents: **GARSSON, Ross, Spencer et al.**; Winstead Sechrest & Minick P.C., P.O. Box 50784, Dallas, TX 75201-0784 (US).

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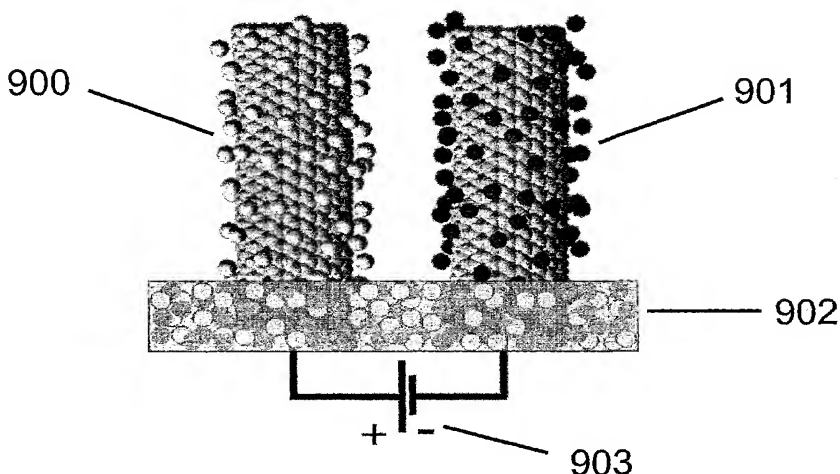
(72) Inventors; and

(75) Inventors/Applicants (for US only): **SUH, Dong-Seok** [KR/US]; 38-7, Seoul Garden Villa 701 Ho, CheongDam 2Dong, GangNam Gu, 135-951 Seould (KR). **BAUGHMAN, Ray, Herny** [US/US]; 5428 Willow Wood Lane, Dallas, TX 75252 (US). **ZAKHIDOV, Anvar, Abdulahadovic** [RU/US]; 1500 Berwick Drive, McKinney, TX 75070 (US).

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(54) Title: MATERIAL AND DEVICE PROPERTIES MODIFICATION BY ELECTROCHEMICAL CHARGE INJECTION IN THE ABSENCE OF CONTACTING ELECTROLYTE FOR EITHER LOCAL SPATIAL OR FINAL STATES



(57) Abstract: In some embodiments, the present invention is directed to processes for the combination of injecting charge in a material electrochemically via non-faradaic (double-layer) charging, and retaining this charge and associated desirable properties changes when the electrolyte is removed. The present invention is also directed to compositions and applications using material property changes that are induced electrochemically by double-layer charging and retained during subsequent electrolyte removal. In some embodiments, the present invention provides reversible processes for electrochemically injecting charge into material that is not in direct contact with an electrolyte. Additionally, in some embodiments, the present invention is directed to devices and other material applications that use properties changes resulting from reversible electrochemical charge injection in the absence of an electrolyte.

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